

## CSci 3501 Assignment 10

Due Monday, December 1st.

**Problem 1 (9 points).** Sipser, exercise 2.16 p. 156. In other words, given two context-free grammars  $G_1, G_2$  that derive languages  $L_1, L_2$ , respectively, show how to construct context-free grammars for the languages  $L_1 \cup L_2$ ,  $L_1 \circ L_2$ , and  $L_1^*$ . Alternatively you can start with two PDAs and construct PDAs for the required languages.

**Problem 2 (9 points).** Sipser, exercises 2.30a, 2.31, 2.32 p. 157.